

2021

1. A valve apparatus for deploying in, and securing to, a tissue annulus, said valve comprising:
 - a uni-directional valve portion for passing fluid in one direction and obstructing fluid in an opposite direction;
 - a connector band located circumferentially around, and attached to, said valve portion; and
 - a plurality of fingers located circumferentially around, and attached to, said band, said fingers being adapted to secure said valve to said tissue annulus.
2. The valve of claim 1, wherein said fingers are adapted to secure said valve to said tissue annulus upon expansion of said band.
3. The valve of claim 1, wherein said fingers can be expanded from a first position adjacent to said band, engaged to said tissue annulus, and returned to said first position following said engagement, thereby securing said band to said tissue annulus.
4. The valve of claim 1, wherein said fingers are formed from an elastic material.
5. The valve of claim 1, wherein said band comprises a gasket located around an outer circumference of said band, said gasket for sealing between said band and said tissue annulus.
6. The valve of claim 1, wherein said fingers are hooked.

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8. The valve of claim 1, wherein said
are barbed and hooked.

9. The valve of claim 1, wherein said
re substantially parallel to a central
nal axis of said band.

~~the valve
stantially
of said~~

11. The valve of claim 1, wherein said band is adjustable.

12. A method for attaching a uni-directional
a tissue annulus, said valve having a
band attached circumferentially around said
id band having fingers attached
entially around said band, said method
g:

positioning said uni-directional valve
nulus; and

engaging said fingers to said annulus
fingers secure said valve to said
ch that said valve controls the flow of
said annulus.

13. The method of claim 12 the engaging
comprising engaging such that said valve
substantially only uni-directional flow through
plus.

14. The method of claim 12 wherein said positioning comprises expanding said valve such that said valve substantially fills said annulus and wherein said expanding occurs before said engaging.

15. The method of claim 12 wherein said positioning comprises expanding said valve such that said valve substantially fills said annulus and wherein said expanding occurs before said engaging.

16. The method of claim 12 wherein said engaging is caused by expanding said valve such that said valve substantially fills said annulus.

17. The method of claim 12 wherein said engaging further comprises expanding said fingers for engaging said fingers to said annulus.

18. The method of claim 12 wherein said engaging further comprises expanding said fingers and rotating said valve to engage said fingers to said annulus.

19. The method of claim 12 wherein said engaging said fingers to said annulus comprises repeatedly pulling a single portion of said annulus onto at least a single one of said fingers.

20. A connector band for providing an interface between a uni-directional valve and a tissue annulus, said band comprising:

a wall for location circumferentially around, and attachment to, said valve, said wall having a plurality of recesses for receiving said valve; and a plurality of fingers located circumferentially around, and attached to, said wall,

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said fingers being adapted to secure said band to said tissue annulus.

21. The valve of claim 20, wherein said band is expandable.

22. The band of claim 20, wherein said fingers are adapted to secure said band to said tissue annulus upon expansion of said band.

23. The valve of claim 20, wherein said fingers can be expanded from a first position adjacent to said band, engaged to said tissue annulus, and returned to said first position following said engagement, thereby securing said band to said tissue annulus.

24. The valve of claim 20, wherein said fingers are formed from an elastic material.

25. The valve of claim 20, wherein said band comprises a gasket located around an outer circumference of said band, said gasket for sealing between said band and said tissue annulus.

26. The valve of claim 20, wherein said fingers are hooked.

27. The valve of claim 20, wherein said fingers are barbed.

28. The valve of claim 20, wherein said fingers are hooked and barbed.

30. The valve of claim 20, wherein said fingers are substantially perpendicular to a central longitudinal axis of said band.

30. The valve of claim 20, wherein said fingers are substantially perpendicular to a central longitudinal axis of said band.

31. The valve of claim 20, wherein said recesses are adapted to receive rivets, said rivets being to attach said valve to said band.

32. The valve of claim 20, wherein said recesses are adapted to receive screws, said screws being to attach said valve to said band.

33. The valve of claim 20, wherein said recesses are for receiving clips, said clips being for attaching said valve to said band.

34. A method for attaching a uni-directional valve to a tissue annulus using a connector band attached circumferentially around said valve, said band having fingers attached circumferentially around said band, said method comprising:

positioning said band within said
annulus;

engaging said fingers to said annulus
such that said fingers secure said band to said
annulus; and

attaching said valve to said band such that said valve controls the flow of fluid through said annulus.

35. The method of claim 34 the engaging further comprising engaging such that said valve

36. The method of claim 34 wherein positioning comprises expanding said band such that said band substantially fills said annulus before said engaging.

38. The method of claim 34 wherein said engaging is caused by expanding said band.

40. The method of claim 34 wherein said engaging further comprises expanding said fingers and rotating said valve to engage said fingers to said annulus.

42. The method of claim 34 said attaching further comprising riveting said valve to said band.

43. The method of claim 34 said attaching further comprising clipping said valve to said band.

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a plurality of fingers located circumferentially around, and attached to, said valve, said fingers being adapted to secure said valve to said tissue annulus.

47. The valve of claim 45, wherein said fingers can be expanded from a first position adjacent to said valve, engaged to said tissue annulus, and returned to said first position following said engagement, thereby securing said valve to said tissue annulus.

49. The valve of claim 45, wherein said valve comprises a gasket located around an outer circumference of said valve, said gasket for sealing between said valve and said tissue annulus.

50. The valve of claim 45, wherein said fingers are hooked.

~~51. The valve of claim 45, wherein said fingers are barbed.~~

52. The valve of claim 45, wherein said fingers are barbed and hooked.

53. The valve of claim 45, wherein said fingers are substantially parallel to a central longitudinal axis of said valve.

54. The valve of claim 45, wherein said fingers are substantially perpendicular to a central longitudinal axis of said valve.

55. A method for attaching a uni-directional valve to a tissue annulus, said valve having fingers attached circumferentially around said valve, said method comprising:

positioning said uni-directional valve within said annulus such that said valve substantially fills said annulus; and

engaging said fingers to said annulus such that said fingers secure said valve to said annulus and such that said valve controls the flow of fluid through said annulus.

56. The method of claim 55 the engaging further comprising engaging such that said valve permits substantially only uni-directional flow through said annulus.

57. The method of claim 55 wherein said engaging further comprises expanding said fingers for engaging said fingers to said annulus.

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59. The method of claim 52 wherein said engaging said fingers to said annulus comprises repeatedly pulling a single portion of said annulus onto at least a single one of said fingers.